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AMENDMENTS TO THE CLAIMS

11. (Currently amended) A method for eliminating overlap in a communication network, which includes nodes mutually connected by network segments, the method comprising:

configuring the nodes to operate as virtual bridges having virtual ports that link the virtual bridges one to another over respective virtual connections, each of the virtual connections coinciding respectively with one or more of the network segments;

assigning to the virtual ports respective port costs that are responsive to a count of the network segments with which the respective virtual connections coincide, so as to favor virtual paths between pairs of the nodes that are made up of a greater number of the virtual connections, relative to the virtual paths that are made up of a lesser number of the virtual connections; and

selecting the virtual connections over which to send traffic between the virtual bridges responsively to the respective port costs such that when a first virtual connection between a first virtual bridge and a second virtual bridge overlaps a sequence of two or more other virtual connections between the first virtual bridge, one or more intermediate virtual bridges, and the second virtual bridge, the first virtual connection is blocked, and the traffic is sent over the sequence of virtual connections.

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28. (Currently amended) A device for operation as one of a plurality of nodes in a communication network, in which the nodes are mutually connected by network segments, the device comprising:

one or more ports, operative to send and receive traffic through the communication network; and

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a traffic processor, configured to process the traffic so that the device operates as a virtual bridge, having virtual ports that link the device to other virtual bridges in the network over respective virtual connections, each of the virtual connections coinciding respectively with one or more of the network segments,

wherein the traffic processor is operative to assign to the virtual ports respective port costs that are responsive to a count of the network segments with which the respective virtual connections coincide, so as to favor virtual paths between pairs of the nodes that are made up of a greater number of the virtual connections, relative to the virtual paths that are made up of a lesser number of the virtual connections, and to select the virtual connections over which to send traffic between the virtual bridges responsively to the respective port costs such that when a first virtual connection between a first virtual bridge and a second virtual bridge overlaps a sequence of two or more other virtual connections between the first virtual bridge, one or more intermediate virtual bridges, and the second virtual bridge, the first virtual connection is blocked, and the traffic is sent over the sequence of virtual connections.

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36. (Currently amended) A communication network comprising a plurality of nodes and network segments connecting the nodes in a ring topology,

wherein the nodes are operative to send and receive traffic over the segments and to process the traffic so as to operate as virtual bridges, having virtual ports that link each of the nodes to other virtual bridges in the network over respective virtual connections, each of the virtual connections coinciding respectively with one or more of the network segments, and

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wherein the nodes are further operative to assign to the virtual ports respective port costs that are responsive to a count of the network segments with which the respective virtual connections coincide, so as to favor virtual paths between pairs of the nodes that are made up of a greater number of the virtual connections, relative to the virtual paths that are made up of a lesser number of the virtual connections, and to select the virtual connections over which to send traffic between the virtual bridges responsively to the respective port costs such that when a first virtual connection between a first virtual bridge and a second virtual bridge overlaps a sequence of two or more other virtual connections between the first virtual bridge, one or more intermediate virtual bridges, and the second virtual bridge, the first virtual connection is blocked, and the traffic is sent over the sequence of virtual connections.